

Neurologists' Duties in Planning for Triage of Critical Care Resources during the COVID-19 Pandemic

The coronavirus pandemic has focused attention on protocols for allocating ventilators and other critical care resources in the event of a shortage. Some of these protocols have been alleged to discriminate against older people and those with disabilities because they consider quality of life and/or functional status, not just survival, as criteria to guide resource allocation. This issue is of special concern for neurologists, as our work with neurological diseases often involves tradeoffs between survival and function.

In April, the US Health and Human Services' Office for Civil Rights required Alabama to remove a set of guidelines from its website stating that in a ventilator shortage, providers should consider excluding certain groups, such as people with "severe or profound mental retardation," "severe functional impairment produced by static or progressive neurological disorders," or "moderate to severe dementia." Priority for ventilators would be assigned based on "an affected individual's level of *premorbid function*, likelihood of response to ventilator support, and likelihood that survival will produce a *functional recovery* [emphasis added]."¹

This case highlights an important difference between typical medical decision-making for individual patients and triage planning focused on allocating resources during a public health emergency. In individual medical decision-making, clinicians routinely make recommendations based upon premorbid function and expected functional recovery, and autonomous patients (or those authorized to decide on their behalf) may decline aggressive therapies based upon what they consider to be unacceptable outcomes; for instance, a patient with amyotrophic lateral sclerosis may decline a tracheostomy, or the decision-maker for a patient with malignant hemispheric stroke might decline decompressive craniectomy. But in triage planning, some patients may be denied access to critical care resources not because expected outcomes are unacceptable to those

patients, but instead because other patients' needs are prioritized over their own. The legitimacy of such protocols in these painful circumstances requires attention to equity, consistency, and transparency.

Triage algorithms must be guided by the principle that all lives have equal value and are worth saving, even when tragic circumstances dictate that not all lives can be saved. Thus, categorical exclusions of certain groups of patients ("moderate to severe dementia") are inherently problematic, as they communicate that some lives are less worth saving.

Triage also ought to maximize the benefits of scarce resources for a population. The most widely agreed-upon "benefit" to be maximized is survival.²⁻⁵ One widely adopted protocol developed at the University of Pittsburgh Medical Center (UPMC) addresses expected survival by assigning each patient points for near-term mortality risk (considering major and severe comorbidities) and for acute physiological compromise (utilizing the Sequential Organ Failure Assessment score), with other factors (age, critical worker status) used to modify scores or as tie-breakers.³

More controversial is whether—or how—quality of life should be considered as a "benefit" to be maximized in triage. Quality of life is both a major consideration in individual health care decisions and in various domains of public health, where decisions based on quality-adjusted life years assume that a year of healthy life is "worth more" than a year of life with illness. Yet there are both ethical and practical barriers to considering quality of life in triage. Quality of life may be influenced not only by health and functional status but also by socioeconomic status, health access, and other factors not easily quantified. The relationship between functional status and quality of life differs across individuals and may change for a given person over time. There is a tendency among those without disabilities to underestimate quality of life with a

disability; some patients with severe neurological conditions (eg, stroke causing aphasia, high spinal cord injury) adapt to their conditions and enjoy a high quality of life. Thus, decisions based on external assessments of quality of life risk arbitrarily devaluing the lives of those with disabilities.⁴ It is rarely possible in the acute setting to predict an individual's future disability, their ability to adapt to disability, or their future quality of life.⁶

There are neurological catastrophes that produce such extreme compromise of function that quality of life is difficult to assess—or even to imagine—in the chronic state. For example, if triage protocols only consider survival, a severely ill patient in a chronic unresponsive wakeful state might be prioritized over a patient with multiorgan failure with a higher likelihood of death but whose survival would likely result in functional independence. Might these extremes of chronic functional impairment merit consideration in scarce resource allocation?

It is important to acknowledge the limitations of our current ability to understand the lived experience in disorders of consciousness or predict future recovery of consciousness; cultural differences in the valuation of compromised neurologic states; historical abuses of people with disabilities; and the real risk that preidentifying any group as having “unacceptably poor” quality of life is a slippery slope that could lead to discrimination. Because of these challenges, we believe that quality of life should not be considered in these triage algorithms, even though it may continue to inform individual patient decision-making. However, this question is not simple, and broader public involvement is necessary to evaluate whether such decisions accord with people's moral intuitions.

The UPMC framework has been a useful starting point for scarce resource allocation because it centers triage around survival, avoids categorical exclusion criteria, has been developed with a measure of public input, and places responsibility for rationing with dedicated triage teams rather than frontline clinicians. Yet, as states, hospitals, doctors, and potential patients have looked more closely at the specifics of such a framework, it is clear that many important issues, including the one we discuss here, have not reached broad consensus.

We are fortunate that we have not yet had to implement these protocols in the United States. As we anticipate the next waves of this pandemic, neurologists ought to engage our hospitals, our colleagues, our patients, and their caregivers around these difficult questions. We should also encourage our medical centers to perform trial runs of protocols (eg, calculating scores for current patients) to ensure that they conform to shared moral intuitions and can be publicly justifiable to those adversely affected.

One key duty of neurologists in a pandemic is to plan and to be prepared for painful decisions. It is time for neurologists to take part in the daunting and serious task of ensuring that protocols for scarce resource allocation are ethically sound and legal, and hold up to public scrutiny. We are far from the end of this pandemic, and the time to prepare is now.

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Author Contributions

A.L.G. wrote and revised the manuscript. W.C. and J.C.H. provided critical revision of the manuscript's intellectual content.

Potential Conflicts of Interest

Nothing to report.

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